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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,401	10/21/2003	Hiroyuki Noguchi	03FI001US	2534
21254	7590	11/24/2004	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			TRAN, LEN	
			ART UNIT	PAPER NUMBER
			1725	

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,401

Applicant(s)

NOGUCHI ET AL.

Examiner

Len Tran

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/21/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashima et al (US 4,163,000).

As to claim 1, Kashima et al disclose a method of casting aluminum (col. 7, line 64-65) comprising the steps of producing a sand mold (col. 6, line 27-28), injecting molten aluminum into the mold, cooling the casting together with the mold by water, and dismantling the mold (col. 7, lines 62-69).

As to claim 2, the cooling step comprises dipping the sand mold together with the casting in water (col. 9, lines 25-31).

As to claim 4 and 5, the sand is dried and reused (col. 9, line 31 and col. 14, lines 11-15).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima et al (US '000), and further in view of Sutton et al (US 5,735,334).

As to claim 3, Kashima et al disclose a method of casting aluminum (col. 7, line 64-65) comprising the steps of producing a sand mold (col. 6, line 27-28), injecting molten aluminum into the mold, cooling the casting together with the mold by water, and dismantling the mold (col. 7, lines 62-69), wherein the cooling step comprises dipping the sand mold together with the casting in water (col. 9, lines 25-31).

Kashima et al fail to disclose the steps of producing a unit sand mold within a mold making chamber on a casting line, the sand mold having cavities on front and rear faces thereof in a direction of casting line, connecting a plurality of unit sand molds on the casting line by joining the front face of one unit sand mold to the rear face of the preceding unit sand mold to form a train of connected sand mold, injecting molten aluminum into the cavities, and cutting the train of connected sand molds at substantially central portion of each unit sand mold.

However, Sutton et al disclose the steps of producing a unit sand mold within a mold making chamber on a casting line, the sand mold having cavities on front and rear faces thereof in a direction of casting line, connecting a plurality of unit sand molds on the casting line by joining the front face of one unit sand mold to the rear face of the preceding unit sand mold to form a train of connected sand mold (col. 2, lines 14-30, col. 3, lines 36-54) for the purpose of increasing the rate at which casting can be made.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide successions of mold halves as taught by Sutton et al, in Kashima et al in order to increase production rate.

Furthermore, it would also have been obvious to one of ordinary skill in the art to cut the train of connected sand molds at a substantially central portion of each unit sand mold, since both sides of the mold are cavities, which only leaves the center of the mold to be cut. If the cutting was to take place at anywhere other than the center, then the casting will be defective. Therefore, one of ordinary skill in the art would have readily acknowledged the only part of the mold to be cut is the center of the mold.

As to claim 6, Kashima et al disclose the sand is dried and reused (col. 9, line 31 and col. 14, lines 11-15).

Citations of Relevant Prior Arts

Cle Noguerras et al (US 6,463,993) and Achinger et al (US 4,442,882)

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (571) 272-1184. The examiner can normally be reached on M-F, 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Len Tran
Examiner
Art Unit 1725



LT
November 23, 2004